BUREAU OF LAND MANAGEMENT
ELKO FIELD OFFICE
BURNED AREA EMERGENCY REHABILITATION TEAM

ELKO 13 FIRE COMPLEX

FOREST AND WOODLANDS RESOURCE ASSESSMENT

I ISSUES

- **Reforestation of woodland species within severely burned areas.**
- **Potential loss of aspen cover type from fire effects.**
- **Potential loss of woodland cover types from the landscape.**

II OBSERVATIONS

A Background

Fire History

The Elko13 Fire Complex was an umbrella of numerous fires which occurred in the Elko Field Office area. For a complete history of these fires, refer to the Operations Assessment portion of this plan.

There has been no major impact to forest and woodland types by this fire complex.

Vegetation

The major woodland species within the fire areas include Pinyon pine *(Pinus monophylla),* Utah juniper *(Juniperus osteosperma),* Curlleaf mountain mahogany *(Cercocarpus ledifolius),* and Antelope bitterbrush *(Purshia tridentata).*

Aspen *(Populus tremuloides)* is the only significant commercial forest species of concern. Remnant stands of aspen appear widely scattered throughout the districts in relatively small stands, some as small as ½ acre. Very few relic populations of aspen and Narrowleaf cottonwood (*Populus angustifolia*) still exist along stream courses and around springs and seeps.

The pinyon-juniper cover type was found on all aspects and at elevations generally below 6,500 feet. Aspen was encountered above 7,000 feet. Occasional aspen clones were encountered at lower elevations in draw bottoms, associated with springs and stream courses.

The number and size of the fires involved, and lack of an accurate local database precludes obtaining accurate information on acreage of woodland type within the burned area (or the total woodland acreage burned and to what level of severity).

From 1980 to 1998 it is estimated that 15,500 acres had been lost to wildfires and, combined with losses in 1999, indicate that loss of these habitat types is widespread in Northern Nevada, and that efforts should be made to maintain these species on their native range.

Management Direction

Management direction is outlined in the Resource Management Plan for the Elko Field Office and also Normal Fire Rehabilitation Plans (NFRP's). Specific objectives are:

- Manage suitable forested lands for optimum production of woodland products on a sustained-yield basis while protecting sensitive values.
- Maintain where necessary for management those routes currently servicing pinyon-juniper harvest areas.
- To set aside certain historical pinyon-juniper woodland areas for noncommercial pine nut gathering by Nevada Indians and all other members of the public.
- Seedlings of native shrubs or trees may be planted as an EFR measure to restore forest productivity.

The primary concern expressed during the Team assessment process was the general decline in acreage of both aspen and woodlands on the landscape due not only to fire loss, but other land management practices as well.

Without active restoration, efforts to maintain and reintroduce these species within the Elko Field Office area will be limited.

This report will emphasize the reforestation of these species as a primary goal of the field areas effected.

Tree Damage/Mortality

Aspen and Cottonwoods: Fire killed aspen and cottonwoods generally occurred as periphery trees in individual stands and along riparian areas in drainages. For the most part, these stands were not heavily impacted by the fire. Isolated steep drainages in the Beowawe and Kelly Creek were impacted the most. Mortality occurred from foliage loss as well as cambium damage. All size classes were effected.

Woodland species:. There is evidence of some prolonged fire residence time, as indicated by ash patterns, that suggest that heavy contiguous ground fuel existed pre-burn. Some small areas experienced 100% mortality with no needles or foliage remaining. In areas where burned foliage is still present, the needles are blackened and brittle, indicating dead crowns. The results are that the woodland species in these severely burned areas have been eliminated from the landscape. Most woodland areas experienced lower fire intensity and mosaic patterns of unburned or partial burned landscapes. These remnant stands will survive and should regenerate naturally. Some additional mortality will continue to occur for several years as a result of fire induced stress and loss of photo synthetic capability. Stressed trees also encourage mortality from numerous insect and disease pathogens.

Harvest and Fuels Treatment History

The majority of the burned areas have little history of harvest treatments, or very limited harvesting of small amounts of woodland products such as fuelwood, posts and Christmas trees.

The past history of fire suppression activity has allowed many stands to reach high stocking densities and maturity, which contributed to the fire intensity.

B Reconnaissance Methodology

Burn area assessment consisted of both aerial and ground reconnaissance and mapping. Due to poor access and limited flight time, many areas received no inventory by the BAER forester. Only those fires that were might have a significant impact to the forest and woodlands were surveyed. Other information provided by various resource advisors attached to the Team was used as a reference source**.**

C Findings

Forest Mortality

Levels of fire mortality in woodland areas can generally be categorized as moderate(with less than 30% of the stems killed), mosaic burn (with up to 80% of the stems killed) and stand replacement (> 80% mortality).

Again, due to the magnitude of the fires and areas involved, accurate mapping of all levels of severity and acres effected was not possible. Suffice it to say however, that there has been a minor loss of the woodland cover type on the Elko BLM Field Office. Detailed estimated volume lost due to these fires was unavailable from the office.

Potential Reforestation

Reforestation may be considered in the future on areas within the fire complex that have been moderately to severely impacted. These areas will be monitored for further mortality and may be considered for future treatments.

Potential Salvage

Much of the burned area will be opened to the public to harvest usable products. Boundaries will be established on some areas by BLM staff.

Forest Health

Aspen and cottonwood stands that were burned will actually benefit from the effects of the fire. These are expected to sprout rapidly and rejuvenate the clones that remain. During the development of this text, it was documented that suckers were already appearing on the Kelly Creek Fire. The pre fire condition of these clones contained decadent mature trees that were dying out through natural succession. Post-fire sprouting will return these areas to their early seral stage. Some of these areas can be expected to expand in size over the pre-fire acreage. To ensure the successful replacement of these stands the areas must be protected until the young sprouts have reached a height where browsing will not kill the individual plants. This can be achieved by closing the area to grazing animals by fencing the drainages where the stands occur. Due to the steepness of the terrain, the most economical and effective means is to place a gap fence at the mouth of the drainage to prevent animals from accessing this delicate habitat.

Woodland species however will experience just the opposite effect. The intensity of some of the fire has effectively removed some areas of tree cover and associated seed sources. Without management intervention through reforestation, some areas will experience a type conversion within the foreseeable future, from trees to grass and shrub species. Some seed may be reintroduced into these areas to enhance

regeneration to woodland cover types. Long term benefits of this action will include, restoring wildlife habitat by providing cover and browse species. Tree cover will break up contiguous fuels and may limit the potential for future catastrophic fires. The planting of pinyon pine would provide a future source of pinyon nut for collection by Native Americans.

III RECOMMENDATIONS

A Management (specification related)

See recommendation W-1a under Soil, Watershed and Aquatic/Riparian Resources Assessment

B Monitoring (specification related)

a. M-1a BLM 98-148 III. C1 Monitoring

General Description: Monitoring aspen stands with walk-thru examinations or establish a grid of fixed plots to ensure that excessive browsing from wildlife and livestock does not inhibit the growth and survival of aspen seedlings. Establish a grid of fixed plots in woodland plantations to insure acceptable levels of seedling survival. All burned quaking aspen and cottonwood stands on the Kelly, Beowawe and Linka Fires should be monitored twice annually for at least 5 years or until seedlings are 5 to 7 feet tall.

C Management (non-specification related)

The following recommendations are not related to plan specifications but should be considered. These can not be accomplished through EFR funding.

Salvage of fire killed trees

Harvest operations should take advantage of fire killed species of commercial size and quality, to be utilized for wood products. Scorched or damaged trees with at least 1/3 live crown should not be harvested as they have the potential to survive and provide a local seed source for natural regeneration. The slash that results from this operation will provide a microsite for future natural and artificial regeneration. Slash left on site will also retard the flow of water and soil movement and help to minimize soil erosion.

Continued reforestation

Areas that are type converted to grass and shrub land should be considered as candidates for a continuing reforestation program on the district. A continued effort on the part of management will be required to insure that woodland cover types will remain a viable component of the local ecosystem. Alternative funding sources will need to be located to conduct these projects.

IV CONSULTATIONS

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V REFERENCES

Proposed Resource Management Plan and Final Environmental Impact Statement Elko Resource Area 1986.

Finding of No Significant Impact and Decision Record: Woodhills Fire Rehabilitation Supplement to the NFRP EA-NV-010-94-035.

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